

FIGURE 1

TRYYLGAVELSW,	RRYYLGAVELSWD,	RYYLGAVELSWDY,	YYLGAVELSWDYM,
GAVELSWDYMQSD,	VELSWDYMQSDLG,	LSWDYMQSDLGEL,	WDYMQSDLGELPV,
DYMQSDLGELPVD,	SDLGELPVDARFP,	GELPVDARFPFRV,	LPVDARFPFRVPK,
ARFPFRVPKSFPP,	PRVPKSFPPNTSV,	PKSFPPNTSVVYK,	KSFPPNTSVVYKK,
FPFNTSVVYKCTL,	TSVVYKCTLFVEF,	SVVYKCTLFVEFT,	VVYKCTLFVEFTD,
KTLFVEFTDHLFN,	TLFVEFTDHLFNI,	LFVEFTDHLFNIA,	VEFTDHLFNIAKP,
EFTDHLFNIAKPR,	DHLFNIAKPRPPW,	HLFNIAKPRPPWM,	FNIAKPRPPWMGL,
PPWMGLLGPTIQA,	PWMGLLGPTIQAE,	MGLLGPTIQAEVY,	GLLGPTIQAEVYD,
LLGPTIQAEVYDT,	PTIQAEVYDTVVI,	AEVYDTVVITLKN,	EVYDTVVITLKNM,
VYDTVVITLKNMA,	DTVVITLKNMASH,	TVVITLKNMASHP,	VVITLKNMASHPV,
ITLKNMASHPVSL,	TLKNMASHPVSLH,	KNMASHPVSLHAV,	SHPVSLHAVGVSY,
HPVSLHAVGVSYW,	PVSLHAVGVSYWK,	VSLHAVGVSYWKA,	HAVGVSYWKASEG,
VGVSYWKASEGAE,	VSYWKASEGAEYD,	SYWKASEGAEYDD,	EGAEYDDQTSQRE,
AEYDDQTSQREKE,	QREKEDDKVFPGG,	DKVFPGGSHTYVW,	KVFPGGSHTYVWQ,
GSHTYVWQVLKEN,	HTYVWQVLKENG,	TYVWQVLKENGPM,	YVWQVLKENGPM,
WQVLKENGPMASD,	QVLKENGPMASDP,	KENGPMASDPLCL,	GPMASDPLCLTYS,
DPLCLTYSYLSHV,	LCLTYSYLSHVDL,	LTYSYLSHVDLVK,	YSYLSHVDLVKDL,
SYLSHVDLVKDLN,	SHVDLVKDLNSGL,	VDLVKDLNSGLIG,	DLVKDLNSGLIGA,
KDLNSGLIGALLV,	DLNSGLIGALLVC,	LNSGLIGALLVCR,	SGLIGALLVCREG,
GLIGALLVCREGS,	IGALLVCREGSLA,	GALLVCREGSLAK,	ALLVCREGSLAKE,
LLVCREGSLAKEK,	GSLAKEKTQTLHK,	QTLHKFILLFAVF,	TLHKFILLFAVFD,
HKFILLFAVFDEG,	KFILLFAVFDEGK,	FILLFAVFDEGKS,	ILLFAVFDEGKSW,
LLFAVFDEGKSWH,	FAVFDEGKSWHSE,	AVFDEGKSWHSET,	KSWHSETKNSLMQ,
NSLMQDRDAASAR,	SLMQDRDAASARA,	MQDRDAASARAWP,	RAWPKMHTVNGYV,
PKMHTVNGYVNR,	HTVNGYVNRSLPG,	NGYVNRSLPGLIG,	GYVNRSLPGLIGC,
RSLPGLIGCHRKS,	PGLIGCHRKSVYW,	GLIGCHRKSVYWH,	KSVYWHVIGMGT,
SVYWHVIGMGTP,	VYWHVIGMGTPPE,	WHVIGMGTPPEVH,	HVIGMGTPPEVHS,
IGMGTPPEVHSIF,	GTPPEVHSIFLEG,	PEVHSIFLEGHTF,	HSIFLEGHTFLVR,
SIFLEGHTFLVRN,	IFLEGHTFLVRNH,	GHTFLVRNHRQAS,	HTFLVRNHRQASL,
TFLVRNHRQASLE,	FLVRNHRQASLEI,	VRNHRQASLEISP,	RQASLEISPITFL,
QASLEISPITFLT,	ASLEISPITFLTA,	LEISPITFLTAQT,	ISPITFLTAQTL,
SPITFLTAQTLLM,	ITFLTAQTLLMDL,	TFLTAQTLLMDLG,	QTLLMDLGQFLLF,
TLLMDLGQFLLF,	LLMDLGQFLLFCH,	MDLGQFLLFCHIS,	DLGQFLLFCHISS,
GQFLLFCHISSHQ,	QFLLFCHISSHQH,	FLLFCHISSHQHD,	LLFCHISSHQHDG,
CHISSHQHDGMEA,	SSHQHDGMEAYVK,	DGMEAYVKVDSCP,	EAYVKVDSCPEEP,
AYVKVDSCPEEPQ,	VKVDSCPEEPQLR,	DSCPEEPQLRMKN,	PQLRMKNNEEAED,
LRMKNNEEAEDYD,	NEEAEDYDDDLTD,	EDYDDDLTDSEMD,	DDDLTDSEMDVVR,
DDDLTDSEMDVVR,	SEMDVVRFDDDNS,	MDVVRFDDDNSPS,	DVVRFDDDNSPSF,
VVRFDDDNSPSFI,	VRFDDDNSPSFIQ,	DNSPSFIQIRSA,	PSFIQIRSAVAKH,
SFIQIRSAVAKHP,	IQIRSAVAKHPKT,	RSVAKHPKTWVH,	KTWVHYIAAEEED,
TWVHYIAAEEEDW,	VHYIAAEEEDWDY,	HYIAAEEEDWDYA,	EDWDYAPLVAPD,
WDYAPLVAPDDR,	APLVAPDDRSYK,	PLVAPDDRSYKS,	LVAPDDRSYKSQ,
VAPDDRSYKSQY,	RSYKSQYLNNGPQ,	YKSQYLNNGPQRI,	SQYLNNGPQIRIG,
QYLNNGPQIRIGR,	NGPQIRIGRYKKV,	QRIGRYKKVRFM,	RKYKKVRFMAYTD,
KKVRFMAYTDETF,	KVRFMAYTDETFK,	VRFMAYTDETFKT,	RFMAYTDETFKTR,
FMAYTDETFKTRE,	MAYTDETFKTREA,	YTDETFKTREAIQ,	ETFKTREAIQHE,
FKTREAIQHESGI,	TREAIQHESGILG,	EAIQHESGILGPL,	QHESGILGPLLYG,
SGILGPLLYGEVG,	GILGPLLYGEVGD,	GPLYGEVGDTL,	PLLYGEVGDTL,
LLYGEVGDTL,	GEVGDTLIFKN,	DTLLIFKNQASR,	TLLIFKNQASRP,
LLIFKNQASRPY,	LIIFKNQASRPYN,	IIFKNQASRPYNI,	SRPYNIPHGITD,
RPYNIPHGITDV,	YNIYPHGITDVRP,	NIYPHGITDVRPL,	PHGITDVRPLYSR,
HGITDVRPLYSR,	TDVRPLYSRRLPK,	RPLYSRRLPKGVK,	PLYSRRLPKGVKH,
RRLPKGVKHLKDF,	KGVKHLKDFPILP,	KHLKDFPILPGEI,	LKDFPILPGEIFK,
KDFPILPGEIFKY,	FPILPGEIFKYKW,	PILPGEIFKYKWT,	GEIFKYKWTVTVE,
EIFKYKWTVTVED,	FKYKWTVTVEDGP,	YKWTVTVEDGPTK,	WTVTVEDGPTKSD,
VTVEDGPTKSDPR,	GPTKSDPRCLTRY,	SDPRCLTRYSSSF,	RCLTRYSSSFVNM,

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Figure 1 (continued)

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TRYSSFVNMERD, VNMERDLASGLIG, LASGLIGPLLIC, PLLICIKESVDQ, KESVDQQRGNQIMS, RNVLFSVFDENR, LFSVFDENRSWYL, SWYLTENIQRFLEP, RFLPNPAGVQLED, QLEDPEFQASNIM, HSINGYVFDLSQL, YVFDLSQLSVCLH, LSVCLHEVAYWYI, AYWYILSIGAQTDF, ILSIGAQTDFLSV, DFLSVFFSGYTFK, FSGYTFKHKMVEY, KMYEDTTLTFPE, TLFFPSGETVFMS, TVFMSMENPGLWI, GLWILGCHNSDFR, CHNSDFRNRGMTA, ALLKVSSCDKNTG, EDSYEDIKAYLLS, ISAYLLSKNNAIE, SKNNAIEPRFSQ, TTIPENDIEKTD, PWFHARTPMPKI, NVSSDDLMLLRQ, LMLLRQSPTPHGL, LSLSDLQEAKYET, PSPGAIDSNNLS, SEMTHFRPQLHHS, GDMVTFPEGLQL, LQLRLNEKLGTTA, KLGTTAATELKKL, KKLDFKVSSTNN, TSNNLISTIPSDN, SDNLAAGTDNTSS, SSLGPPSPMPVHYD, VHYDSQLDTTLEF, TLFGKKSSPLTES, SEENNDKLLSEG, SGLMNSQESSWGK, SWGKNVSSSTESGR, FKGKRAHGPA, ALLTKDNALFKVS, FKVSIISLLKTNKT, ISLLKTNKTSNNS, NRKTHIDGPSLLI, PSLLIENSPSVWQ, PSVWQNILESDFE, DTEFFKVTPLIHD, VTPLIHDRMLMDK, HDRMLMDKNATAL, DKNATALRLNHMS, NHMSNKTTSSKNM, KNMEMVQQKKEGP, GPIPPDAQNPDMS, MSFFKMLFLPESAR, KMLFLPESARWIQ, ARWQIQRTHGKNS, PKQLVSLGPEKSV, VSLGPEKSVEGQN,	RYSSFVNMERDL, NMERDLASGLIGP, SGLIGPLLICKE, LLICYKESVDQGR, ESVDQQRGNQIMSD, NVILFSVFDENRS, FSVFDENRSWYLT, WYLTENIQRFLEN, AGVQLEDPEFQAS, PEFQASNIMHSIN, INGYVFDLSQLSV, VFDLSQLSVCLHE, VCLHEVAYWYILS, YWYILSIGAQTFD, LSIGAQTDFLSVF, LSVFFSGYTFKHK, SGYTFKHKMVEYED, MVEYEDTTLTFPFS, FPFSGETVFMSME, VFMSMENPGLWIL, LWILGCHNSDFRN, SDFRNRGMTALLK, LKVSSCDKNTGDY, DSYEDIKAYLLSK, SAYLLSKNNAIEP, NAIEPRFSQNSR, NDIEKTDPFWAHR, TPMPKIQNVSSD, SDLLMLLRQSPTP, MLLRQSPTPHGLS, SDLQEAKYETFS, SPGAIDSNNLSSE, THFRPQLHHS, GDMVTFPEGLQLR, LRLNEKLGTTAAT, TAATELKKLDFKV, KLDFKVSSTNNL, NNLISTIPSDNLA, DNLAAGTDNTSSL, PSMPVHYDSQLDT, HYDSQLDPTLFGK, SPLTESGGPLSL, NDSKLLSEGSLMNS, GLMNSQESSWGKN, KNVSSSTESGRLFK, AHGPALLTKDNAL, DNALFKVSIISLLK, KVSISLLKTNKTS, SLLKTNKTSNNSA, THIDGPSLLIENS, SLLIENSPSVWQN, TSVWQNILESDFE, TEFFKVTPLIHDR, TPLIHDRMLMDKN, DRMLMDKNATALR, NATALRLNHMSNK, KNATALRLNHMSN, KNMEMVQQKKEGP, PDAQNPDMSFFKM, SFFKMLFLPESAR, MLFLPESARWIQR, RWIQRTHGKNSLN, KQLVSLGPEKSVE, LGPEKSVEGQNFL,	SSFVNMERDLASGL, RDASGLIGPLLI, GLIGPLLICKE, ICYKESVDQQRGNQ, NQIMSDKRNVLFS, VILFSVFDENRSWY, SVFDENRSWYLT, ENIQRFLENPAGV, GVQLEDPEFQASN, SNIMHSINGYVFD, NGYVFDLSQLSVCL, DSLQLSVCLHEVA, HEVAYWYILSIGA, WYILSIGAQTFD, IGAQTDFLSVFFS, SVFFSGYTFKHKM, YTFKHKMVEYEDTL, DTLTLFPFSGETV, SGETVFMSMENPG, MSMENPGLWILG, WILGCHNSDFRNR, RGMTALLKVSSCD, GDYEDSYEDISA, EDISAYLLSKNNA, AYLLSKNNAIEPR, RSFSQNSRHPSTR, TDPWFHARTPMPKI, PKIQNVSSDDLML, DLLMLLRQSPTPH, HGLSLSDLQEAKY, AKYETFSDDPSPG, GAIDSNNLSSEMT, PQLHHS, GDMVTFPEGLQLR, MVTFPEGLQLR, LRLNEKLGTTAAT, TELKKLDFKVSST, LDFKVSSTNNLIST, NNLISTIPSDNLA, LAGTNTSSLG, MPVHYDSQLDPTTL, SQLDPTTLFGKKSS, GPLSLSEENNDKSK, SKLLESGLMNSQ, LMNSQESSWGKNV, GRFLFKGKRAHGPA, HGPALLTKDNALF, NALFKVSIISLLKT, VSIISLLKTNKTSN, LLKTNKTSNNSA, DGPSLLIENSPSV, LLIENSPSVWQNI, QNILESDFE, FKKVTPLIHDRML, PLIHDRMLMDKNAL, RMLMDKNATALRL, TALRLNHMSNKTT, ALRLNHMSNKTTSS, EMVQQKKEGP, NPDMSSFFKMLFLP, FFKMLFLPESARW, LFLPESARWIQRTH, IQRTHGKNSLN, QLVSLGPEKSVEG, GPEKSVEGQNFLS,	SVFVNMERDLASGL, DLASGLIGPLLIC, GPLLICIKESVDQ, CYKESVDQQRGNQ, QIMSDKRNVLFS, ILFSVFDENRSWY, RSWYLTENIQRFLEP, QRFLPNPAGVQLEP, VQLEDPEFQASNI, NIMHSINGYVFD, GYVFDLSQLSVCL, LQLSVCLHEVAYWY, VAYWYILSIGAQTFD, YILSIGAQTFDLSV, TDLFSVFFSGYTFK, VFFSGYTFKHKMVEYEDTL, HKMVEYEDTLTFPEP, TLTFPFSGETVFMS, ETVFMSMENPGLWIL, PGLWILGCHNSDFR, GCHNSDFRNRGMTA, TALLKVSSCDKNT, DYEDSYEDISAY, DISAYLLSKNNAI, YLLSKNNAIEPR, KQFNATTIPENDI, DPWFHARTPMPKI, QNVSSDDLMLLRQ, LMLLRQSPTPHGL, GLSLSDLQEAKY, ETFSDDPSPGAID, NSLSEMTFRPQL, HSGDMVTFPEGLQL, SGLQLRLNEKLGTTA, ELKGTTAATELKKL, ELKKLDFKVSSTSS, FKVSSTNNLIST, STIPSDNLAAGTD, DNTSSLGPPSPMPV, PVHYDSQLDPTTLF, TTLFGKKSSPLTEP, LSLSEENNDKSKLL, KLLESGLMNSQES, SWGKNVSSSTESGR, RLFKGKRAHGPA, PALLTKDNALFKV, ALFKVSIISLLKTN, SISLLKTNKTSNNS, KTSNNSATNRKTH, GPSLLIENSPSVW, IENSPSVWQNI, NILESDFE, KKVTPLIHDRMLMDKN, IHDRMLMDKNATALR, MLMDKNATALRLN, LRLNHMSNKTTSS, SKNMEMVQQKKEGP, EGPIPPDAQNPDMS, PDMSFFKMLFLPEP, FKMLFLPESARWIQRTH, SARWIQRTHGKNSLN, NSLNSGQGPSPKQ, VSLGPEKSVEGQ, KSVGQGNFLSEKN
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Figure 1 (continued)

SVEGQNFSEKNK,	QNFSEKNKVVV,	QNFSEKNKVVVG,	NFSEKNKVVVGK,
NKVVGKGEFTKD,	KVVVGKGEFTKDV,	VVVGKGEFTKDVG,	KGEFTKDVGLKEM,
GEFTKDVGLKEMV,	KDVGLKEMVFPSS,	VGLKEMVFPSSRN,	GLKEMVFPSSRN,
LKEMVFPSSRNLF,	KEMVFPSSRNLF,	EMVFPSSRNFLT,	MVFPSSRNFLT,
SSRNFLTNDNL,	SRNFLTNDNLH,	RNFLTNDNLHE,	NFLTNDNLHEN,
LFLTNDNLHENN,	LTNDNLHENNTH,	TNDNLHENNTHN,	NLDNLHENNTHNQ,
LDNLHENNTHNQ,	DNLENHNTNQE,	EKKIQEEIEKKET,	KKIQEEIEKKETL,
QEEIEKKETLIQE,	EEIEKKETLIQEN,	IEKKETLIQENVV,	KKETLIQENVVLP,
ETLIQENVVLPQI,	TLIQENVVLPQIH,	IQENVVLPQIHTV,	ENVVLPQIHTVTG,
NVVLPQIHTVTGT,	VVLPQIHTVTGTG,	LPQIHTVTGTGNF,	PQIHTVTGTGNFM,
IHTVTGTGNFMKN,	HTVTGTGNFMKNL,	KNFMKNLFLSTR,	NFMKNLFLSTRQ,
FMKNLFLSTRQN,	MKNLFLSTRQNV,	KNLFLSTRQNV,	NLFLSTRQNV,
LFLSTRQNVGS,	FLLSTRQNVGSY,	RQNVGSYDGAYA,	QNVGSYDGAYAP,
EGSYDGAYAPVLQ,	GSYDGAYAPVLQD,	DGAYAPVLQDFRS,	GAYAPVLQDFRSL,
YAPVLQDFRSLND,	APVLQDFRSLNDS,	PVLQDFRSLNDST,	LQDFRSLNDSTNR,
QDFRSLNDSTNRT,	DFRSLNDSTNRTK,	FRSLNDSTNRTKK,	RSNDSTNRTKKH,
AHFSKKGEEENLE,	EENLEGLNQTKQ,	ENLEGLNQTKQI,	LEGLNQTKQIVE,
EGLNQTKQIVEK,	LGNQTKQIVEKYA,	KQIVEKYACTTRI,	QIVEKYACTTRIS,
EKYACTTRISPNT,	TTRISPNTSQQNF,	TRISPNTSQQNFV,	NTSQQNFVTQRSK,
TSQQNFVTQRSKR,	QQNFVTQRSKRAL,	QNFVTQRSKRALK,	NFVTQRSKRALKQ,
QRSKRALKQFRP,	RALKQFRPLEET,	KQFRPLEETELE,	QFRPLEETELEK,
FRPLEETELEKR,	LPLEETELEKRII,	PLEETELEKRIIV,	LEETELEKRIIVD,
TELEKRIIVDDTS,	EKRIIVDDTSTQW,	KRIIVDDTSTQWS,	RIIVDDTSTQWSK,
IIVDDTSTQWSKN,	VDDTSTQWSKNMK,	TQWSKNMKHLTPS,	SKNMKHLTPSTLT,
KNMKHLTPSTLTQ,	KHLTPSTLTQIDY,	PSTLTQIDYNEKE,	STLTQIDYNEKEK,
LTQIDYNEKEKGA,	TQIDYNEKEKGAI,	QIDYNEKEKGAIT,	IDYNEKEKGAITQ,
EKEKGAITQSPLS,	GAITQSPLSDCLT,	SPLSDCLTRSHSI,	SDCLTRSHSIPQA,
DCLTRSHSIPQAN,	SHSIPQANRSPLE,	HSIPQANRSPLEP,	RSPLPIAKVSSFP,
SPLPIAKVSSFPS,	PLPIAKVSSFPSI,	LPIAKVSSFPSIR,	IAKVSSFPSIRPI,
AKVSSFPSIRPIY,	VSSFPSIRPIYLT,	SSFPSIRPIYLTR,	FPSIRPIYLTRVL,
PSIRPIYLTRVLF,	SIRPIYLTRVLFQ,	RPIYLTRVLFQDN,	PIYLTRVLFQDNS,
IYLTRVLFQDNSS,	LTRVLFQDNSSHL,	TRVLFQDNSSHL,	RVLFQDNSSHLPA,
VLFQDNSSHLPA,	QDNSSHLPAASYR,	NSSHLPAASYRKK,	SSHLPAASYRKKD,
SHLPAASYRKKDS,	AASYRKKDSGVQE,	ASYRKKDSGVQES,	KKDSGVQESSHFL,
KDSGVQESSHFLQ,	DSGVQESSHFLQG,	SGVQESSHFLQGA,	VQESSHFLQGAKK,
SHFLQGAKKNNLS,	HFLQGAKKNNLSL,	NNLSLAILTLEMT,	NLSLAILTLEMTG,
LSLAILTLEMTGD,	LAILTLEMTGDQR,	AILTLEMTGDQRE,	LTLEMTGDQREVG,
TLEMTGDQREVG,	LEMTGDQREVGSL,	TGDQREVGSLGTS,	QREVGSLGTSATN,
REVGSLGTSATNS,	VGSLGTSATNSVT,	GSLGTSATNSVTY,	KNNLSLAILTLEM,
NSVTYKKVENTVL,	SVTYKKVENTVLP,	VTYKKVENTVLPK,	KKVENTVLPKPD,
NTVLPKPDLPKTS,	PDLPKTSQKVELL,	SGKVELLPKVHIY,	GKVELLPKVHIYQ,
VELLPKVHIYQKD,	ELLPKVHIYQKDL,	LPKVHIYQKDLFP,	PKVHIYQKDLFPT,
VHIYQKDLFPTET,	HIYQKDLFPTETS,	KDLFPTETSNGSP,	DLFPTETSNGSPG,
PGHLDLVEGSLQ,	GHLDLVEGSLQG,	LDLVEGSLQGTE,	DLVEGSLQGTEG,
VEGSLQGTEGAI,	EGSLQGTEGAIK,	GSLQGTEGAIKW,	SLQGTEGAIKWN,
GAIKWNEANRPGK,	AIKWNEANRPGKV,	IKWNEANRPGKVP,	RPGKVFLRVATE,
GKVPFLRVATESS,	KVPFLRVATESSA,	VFPFLRVATESSAK,	PFLRVATESSAKT,
FLRVATESSAKTP,	LRVATESSAKTPS,	VATESSAKTPSKL,	SKLLDPLAWDNHY,
KLLDPLAWDNHYG,	LLDPLAWDNHYGT,	LDPLAWDNHYGTQ,	DPLAWDNHYGTQI,
PLAWDNHYGTQIP,	LAWDNHYGTQIPK,	DNHYGTQIPKEEW,	NHYGTQIPKEEWK,
GTQIPKEEWSQE,	TQIPKEEWSQEK,	KEEWSQEKSPEK,	EEWSQEKSPEKT,
KSQEKSPEKTAFK,	SQEKSPEKTAFFK,	KTAFKKKDTILSL,	QEKSPKTAFFKKK,
KSPEKTAFFKKDT,	SPEKTAFFKKDTI,	KTAFKKKDTILSL,	TAFKKKDTILSLN,
AFKKKDTILSLNA,	DTILSLNACESNH,	TILSLNACESNHA,	ILSLNACESNHAI,
LSLNACESNHAI,	HAIAAINEGQNK,	AIAAINEGQNKPE,	IAAINEGQNKPEI,
AAINEGQNKPEIE,	GQNKPEIEVTWAK,	QNKPEIEVTWAKQ,	GQNKPEIEVTWAK,
QNKPEIEVTWAKQ,	PEIEVTWAKQGR,	EIEVTWAKQGRTE,	IEVTWAKQGRTER,
EVTWAKQGRTERL,	VTWAKQGRTERLC,	TERLCSQNPVVLK,	ERLCSQNPVVLKR,
NPPVLKRHQREIT,	PPVLKRHQREITR,	PVLKRHQREITRT,	LKRHQREITRTTL,
KRHQREITRTTLQ,	REITRTTLQSDQE,	TTLQSDQEEIDYD,	QEEIDYDDTISVE,
EEIDYDDTISVEM,	EIDYDDTISVEMK,	IDYDDTISVEMKK,	DTISVEMKKEDFD,
TISVEMKKEDFDI,	ISVEMKKEDFDIY,	SVEMKKEDFDIYD,	VEMKKEDFDIYDE,
EDFDIYDEDENQS,	DFDIYDEDENQSP,	FDIYDEDENQSPR,	DIYDEDENQSPRS,

Figure 1 (continued)

YDEDENQSPRSFQ,	PRSFQKKTRHYFI,	RSFQKKTRHYFIA,	TRHYFIAAVERLW,
RHYFIAAVERLWD,	HYFIAAVERLWDY,	YFIAAVERLWDYG,	IAAVERLWDYGMS,
AAVERLWDYGMSS,	ERLWDYGMSSSPH,	RLWDYGMSSSPHV,	LWDYGMSSSPHVL,
WDYGMSSSPHVLR,	YGMSSSPHVLRNR,	MSSSPHVLRNRAQ,	SSSPHVLRNRAQS,
PHVLRNRAQSGSV,	HVLRNRAQSGSVP,	RAQSGSVQFKKVF,	QSGSVQFKKVFV,
GSVPQFKKVVFQE,	VPQFKKVVFQEFT,	PQFKKVVFQEFTD,	FKKVVFQEFTDGS,
KKVVFQEFTDGSF,	KVVQEFTDGSFT,	VVFQEFTDGSFTQ,	VQEFTDGSFTQF,
QEFTDGSFTQPLY,	GSFTQPLYRGELN,	QPLYRGELNEHLG,	PLYRGELNEHLGL,
GELNEHLGLLGPY,	LNEHLGLLGPYIR,	NEHLGLLGPYIRA,	EHLGLLGPYIRAE,
LGLLGPYIRAEVE,	GLLGPYIRAEVED,	LGPYIRAEVEDNI,	GPYIRAEVEDNIM,
PYIRAEVEDNIMV,	YIRAEVEDNIMVT,	RAEVEDNIMVTFR,	AEVEDNIMVTFRN,
EDNIMVTFRNQAS,	DNIMVTFRNQASR,	NIMVTFRNQASRP,	IMVTFRNQASRPY,
MVTFRNQASRPYS,	VTFRNQASRPYSF,	ASRPYSFYSSLIS,	SRPYSFYSSLISY,
RPYSFYSSLISYE,	YSFYSSLISYEED,	SFYSSLISYEEDQ,	YSSLISYEEDQRQ,
SSLISYEEDQRQG,	SLISYEEDQRQGA,	LISYEEDQRQGAE,	ISYEEDQRQGAEF,
KNFVKPNETKTYF,	NFVKPNETKTYFW,	KTYFWKVQHMAP,	TYFWKVQHMAPT,
YFWKVQHMAPTK,	WKVQHMAPTKDE,	HMAPTKDEFDCK,	TKDEFDCKAWAYF,
DEFDCKAWAYFSD,	KAWAYFSDVDLEK,	WAYFSDVDLEKDV,	AYFSDVDLEKDVH,
SDVDLEKDVHSGI,	DVDLEKDVHSGLI,	VLEKDVHSGLIG,	LEKDVHSGLIGPL,
KDVHSGLIGPLLV,	DVHSGLIGPLLVCH,	VHSGLIGPLLVCHT,	SLIGPLLVCHTNP,
GLIGPLLVCHTNT,	IGPLLVCHTNTLN,	GPLLVCHTNTLNP,	PLLVCHTNTLNPA,
LLVCHTNTLNPAH,	NTLNPAHGRQVTV,	AHGRQVTVQEFAL,	RQVTVQEFALFFT,
VTVQEFALFFTIF,	TVQEFALFFTIFD,	QEFALFFTIFDET,	FALFFTIFDETKS,
ALFFTIFDETKSW,	LEFFTIFDETKSWY,	FTIFDETKSWYFT,	TIFDETKSWYFTE,
KSWYFTENMERNCR,	SWYFTENMERNCR,	WYFTENMERNCRAP,	FENMERNCRAPC,
ENMERNCRAPCNI,	PCNIQMEDPTFKE,	CNIQMEDPTFKEN,	IQMEDPTFKENYR,
PTFKENYRFHAIN,	ENYRFHAINGYIM,	NYRFHAINGYIMD,	YRFHAINGYIMDT,
HAINGYIMDTLPG,	AINGYIMDTLPLG,	NGYIMDTLPLGLV,	GYIMDTLPLGLVMA,
YIMDTLPLGLVMAQ,	DTLPLGLVMAQDQ,	TLPLGLVMAQDQRI,	PGLVMAQDQIRIRW,
GLVMAQDQIRIRWY,	LVMAQDQIRIRWYL,	MAQDQIRIRWYLLS,	QIRIRWYLLSMGSN,
IRWYLLSMGSNEN,	RWYLLSMGSNENI,	WYLLSMGSNENIH,	YLLSMGSNENIHS,
LSMGSNENIHSIH,	GSNENIHSIHFSG,	ENIHSIHFSGHVF,	HSIHFSGHVFTVR,
IHFSGHVFTVRKK,	HFSGHVFTVRKKE,	GHVFTVRKKEEYK,	HVFTVRKKEEYKM,
FTVRKKEEYKMAL,	VRKKEEYKMALYN,	KEEYKMALYNLYP,	EEYKMALYNLYPG,
YKMALYNLYPGVF,	MALYNLYPGVFET,	ALYNLYPGVFETV,	YNLYPGVFETVEM,
NLYPGVFETVEML,	PGVFETVEMLPSK,	GVFETVEMLPSKA,	FETVEMLPSKAGI,
ETVEMLPSKAGIW,	VEMLPSKAGIWRV,	EMLPSKAGIWRVE,	MLPSKAGIWRVEC,
AGIWRVECLIGEHL,	GIWRVECLIGEHL,	WRVECLIGEHLHA,	ECLIGEHLHAGMS,
CLIGEHLHAGMST,	EHLHAGMSTLFLV,	HLHAGMSTLFLVY,	AGMSTLFLVYSNK,
STLFLVYSNKCQT,	TLFLVYSNKCQTP,	LFLVYSNKCQTP,	FLVYSNKCQTPGL,
LVYSNKCQTPGLM,	YSNKCQTPGLMAS,	QTPGLMASGHIRD,	TPLGMASGHIRDF,
LGMASGHIRDFQI,	SGHIRDFQITASG,	GHIRDFQITASGQ,	IRDFQITASGQYG,
RDFQITASGQYGO,	FQITASGQYGQWA,	EHLHAGMSTLFLV,	HLHAGMSTLFLVY,
AGMSTLFLVYSNK,	STLFLVYSNKCQTP,	TLFLVYSNKCQTP,	LFLVYSNKCQTP,
FLVYSNKCQTPGL,	LVYSNKCQTPGLM,	YSNKCQTPGLMAS,	QTPGLMASGHIRD,
TPLGMASGHIRDF,	LGMASGHIRDFQI,	SGHIRDFQITASG,	GHIRDFQITASGQ,
IRDFQITASGQYG,	RDFQITASGQYGO,	FQITASGQYGQWA,	TASGQYGQWAPKL,
SGQYGQWAPKLAR,	GQYGQWAPKLARL,	QWAPKLARLHYS,	QWAPKLARLHYS,
PKLARLHYSGSIN,	ARLHYSGSINAWS,	LHYSGSINAWSTK,	GSINAWSTKEPFS,
NAWSTKEPFSWIK,	EPFSWIKVDLLAP,	FSWIKVDLLAPMI,	SWIKVDLLAPMII,
WIKVDLLAPMIH,	IKVDLLAPMIHIG,	VDLLAPMIHIGIK,	DLAPMIHIGIKT,
LLAPMIHIGIKTQ,	APMIHIGIKTQGA,	PMIHIGIKTQGAR,	MIHIGIKTQGARQ,
HGIKTQGARQKFS,	GIKTQGARQKFS,	IKTQGARQKFS,	GARQKFSLYISQ,
QKFSLYISQFIIM,	FSSLYISQFIIMY,	SSLYISQFIIMYS,	SLYISQFIIMYS,
LYISQFIIMYSLD,	YISQFIIMYSLDG,	SQFIIMYSLDGKK,	QFIIMYSLDGKKW,
FIIMYSLDGKKWQ,	IIMYSLDGKKWQT,	IMYSLDGKKWQTY,	YSLDGKKWQTYRG,
KKWQTYRGNSTGT,	QTYRGNSTGTLMV,	GTLMVFFGNVDSS,	TLMVFFGNVDSSG,
LMVFFGNVDSSGI,	MVFFGNVDSSGIK,	VFFGNVDSSGIKH,	FFGNVDSSGIKHN,
GNVDSSGIKHNI,	VDSSGIKHNI FNP,	SGIKHNI FNPPII,	GIKHNI FNPPIIA,
IKHNI FNPPIIAR,	KHNI FNPPIIARY,	HNIFNPPIIARYI,	NIFNPPIIARYIR,
NPPIIARYIRLHP,	PPIIARYIRLHPT,	PIIARYIRLHPH,	ARYIRLHPHYSI,
RYIRLHPHYSIR,	IRLHPHYSIRST,	THYSIRSTLRMEL,	YSIRSTLRMELMG,
STLRMELMGCDLN,	LRMELMGCDLNSC,	CDLNSCSMPLGME,	MELMGCDLNSCSM,
ELMGCDLNSCSMP,	LMGCDLNSCSMPL,	CDLNSCSMPLGME,	CSMPLGMESKAIS,

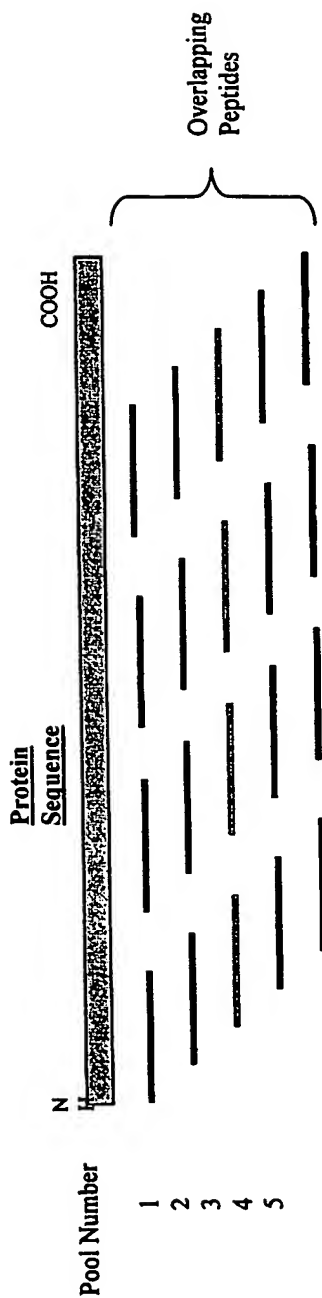
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Figure 1 (continued)

SMPLGMESKAISD,	MPLGMESKAISDA,	LGMESKAISDAQI,	GMESKAISDAQIT,
SKAISDAQITASS,	KAISDAQITASSY,	AISDAQITASSYF,	DAQITASSYFTNM,
AQITASSYFTNMF,	TASSYFTNMFATW,	SSYFTNMFATWSP,	SYFTNMFATWSPS,
TNMFATWSPSKAR,	NMFATWSPSKARL,	FATWSPSKARLHL,	ATWSPSKARLHLQ,
PSKARLHLQGRSN,	ARLHLQGRSNAWR,	LHLQGRSNAWRPQ,	QGRSNAWRPQVNN,
NAWRPQVNNPKEW,	PQVNNPKEWLQVD,	NNPKEWLQVDFQK,	KEWLQVDFQKTMK,
EWLQVDFQKTMKV,	LQVDFQKTMKVTG,	VDFQKTMKVTGVT,	KTMKVTGVTTQGV,
MKVTTGVTTQGVKS,	TGVTTQGVKSLLT,	VTTQGVKSLLTSM,	QGVKSLLTSMYVK,
GVKSLLTSMYVKE,	KSLTSMYVKEFL,	SLTSMYVKEFLI,	LTSMYVKEFLISS,
TSMYVKEFLISSS,	SMYVKEFLISSSQ,	MYVKEFLISSSQD,	YVKEFLISSSQDG,
KEFLISSSQDGHQ,	EFLISSSQDGHQW,	FLISSSQDGHQWT,	ISSSQDGHQWTLF,
SQDGHQWTLFFQN,	GHQWTLFFQNGKV,	HQWTLFFQNGKVK,	WTLFFQNGKVKVF,
TLFFQNGKVKVFQ,	LFFQNGKVKVFQG,	NGKVKVFQGNQDS,	GKVKVFQGNQDSF,
VKVFQGNQDSFTP,	KVFQGNQDSFTP,	DSFTPVVNSLDPP,	TPVVNSLDPPLLT,
PVVNSLDPPLLTR,	NSLDPPLLTRYLR,	SLDPPLLTRYLRI,	PPLLTRYLRIHPQ,
PLLTRYLRIHPQS,	TRYLRIHPQSWVH,	RYLRIHPQSWVHQ,	LRIHPQSWVHQIA,
HPQSWVHQIALRM,	QSWVHQIALRMEV,	SWVHQIALRMEVL,	WVHQIALRMEVLG,
HQIALRMEVLGCE,	IALRMEVLGCEAQ,	LRMEVLGCEAQDL,	

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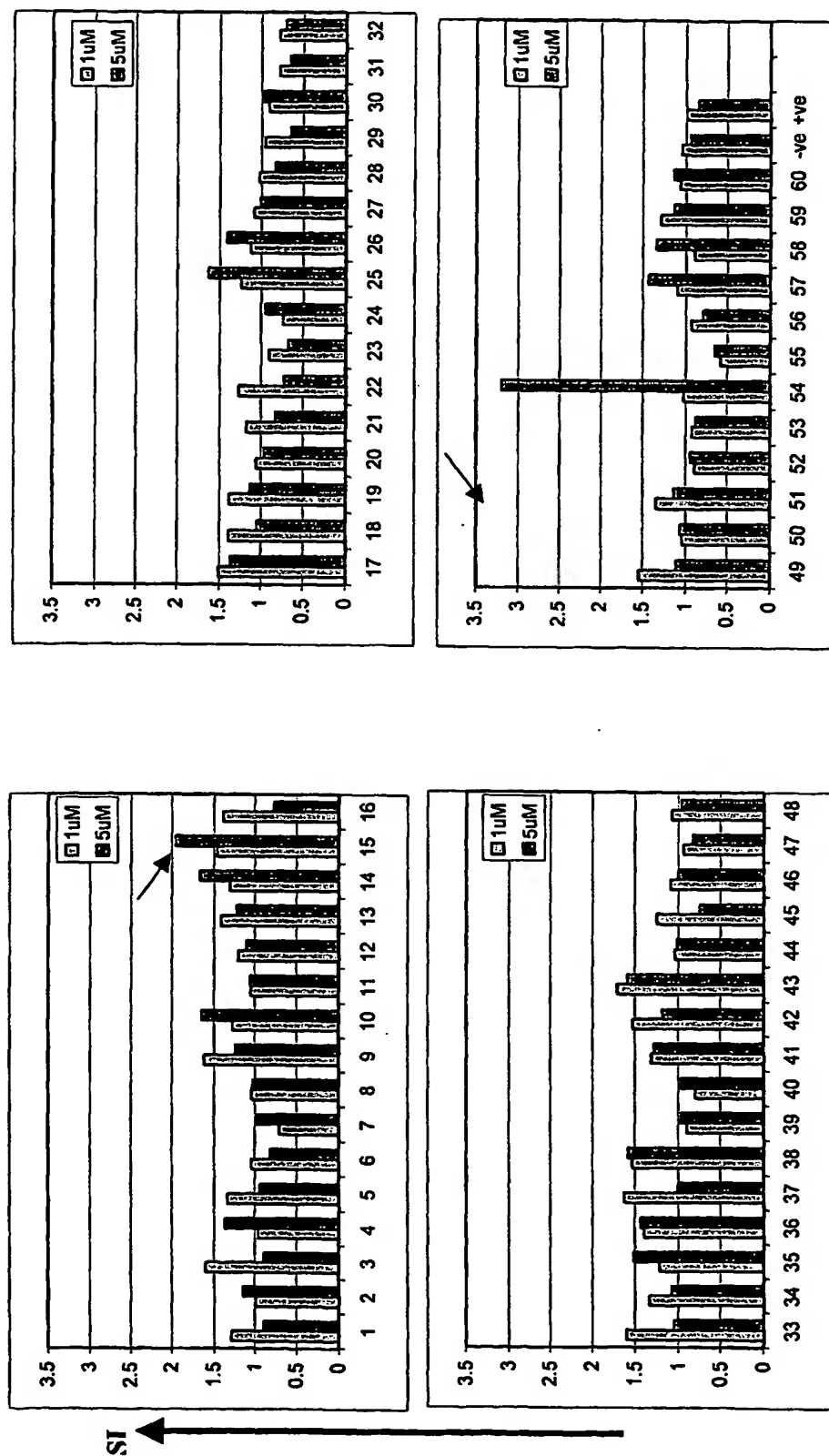
FIGURE 2



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FIGURE 3



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FIGURE 4

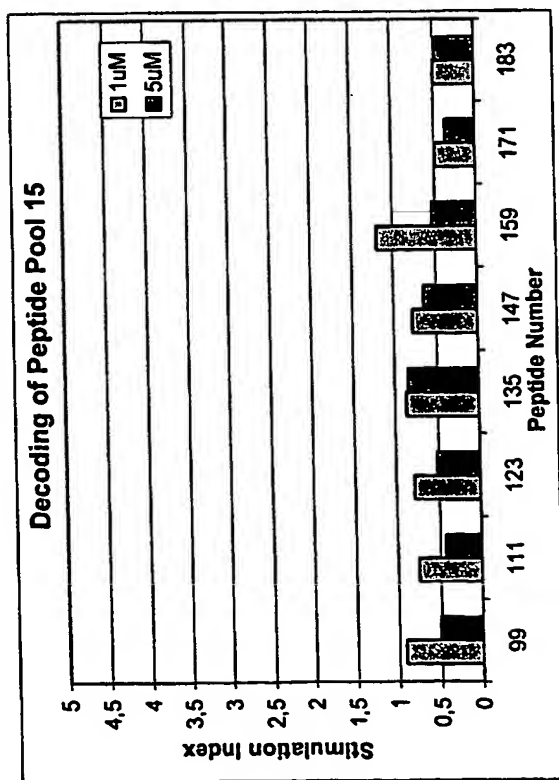
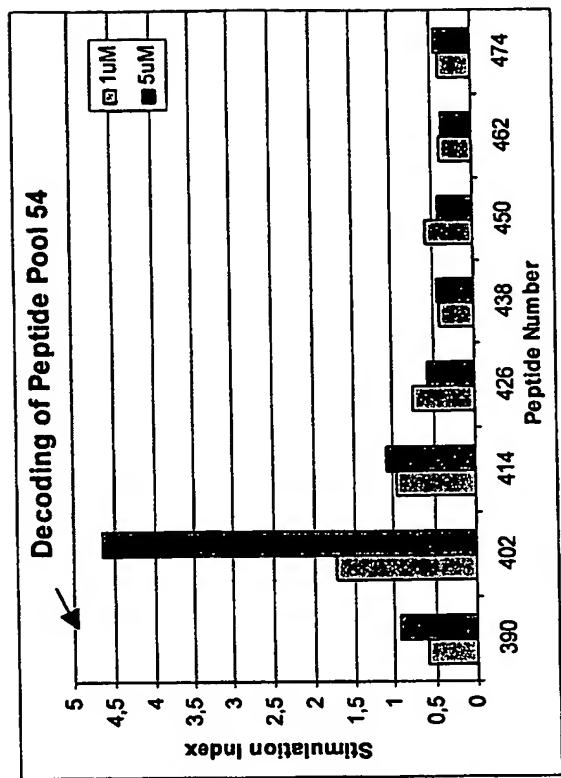


FIGURE 5A

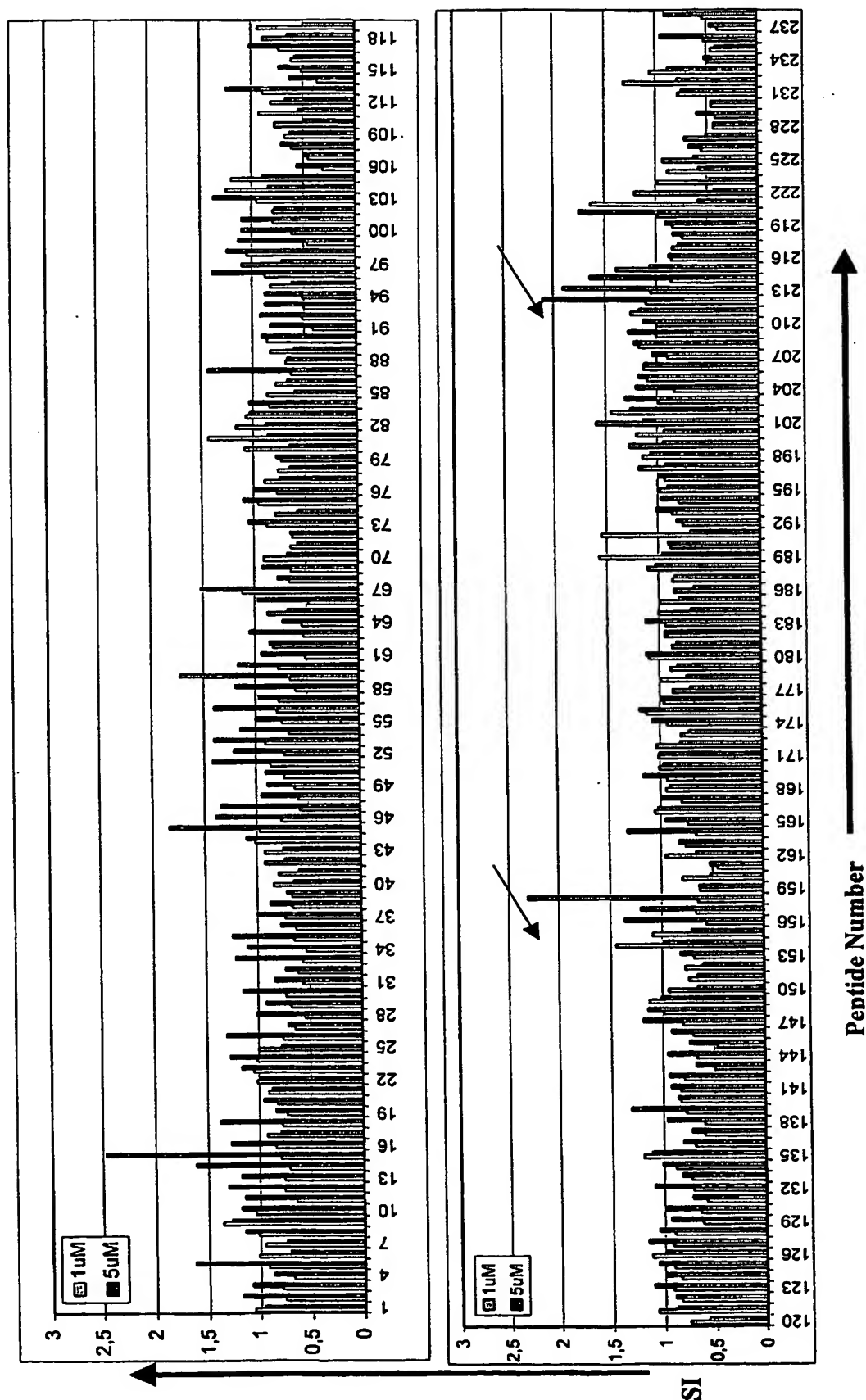


FIGURE 5B

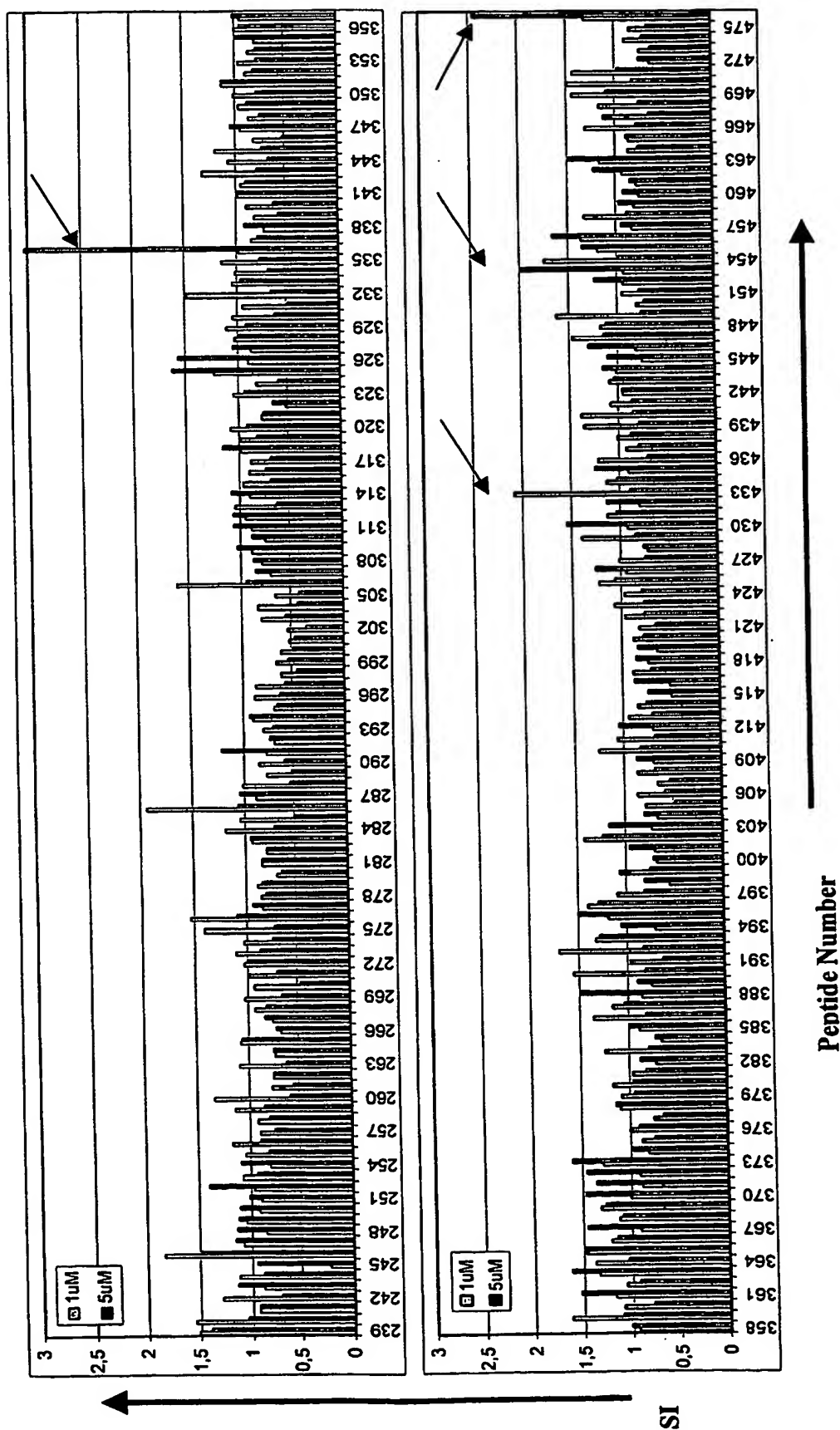
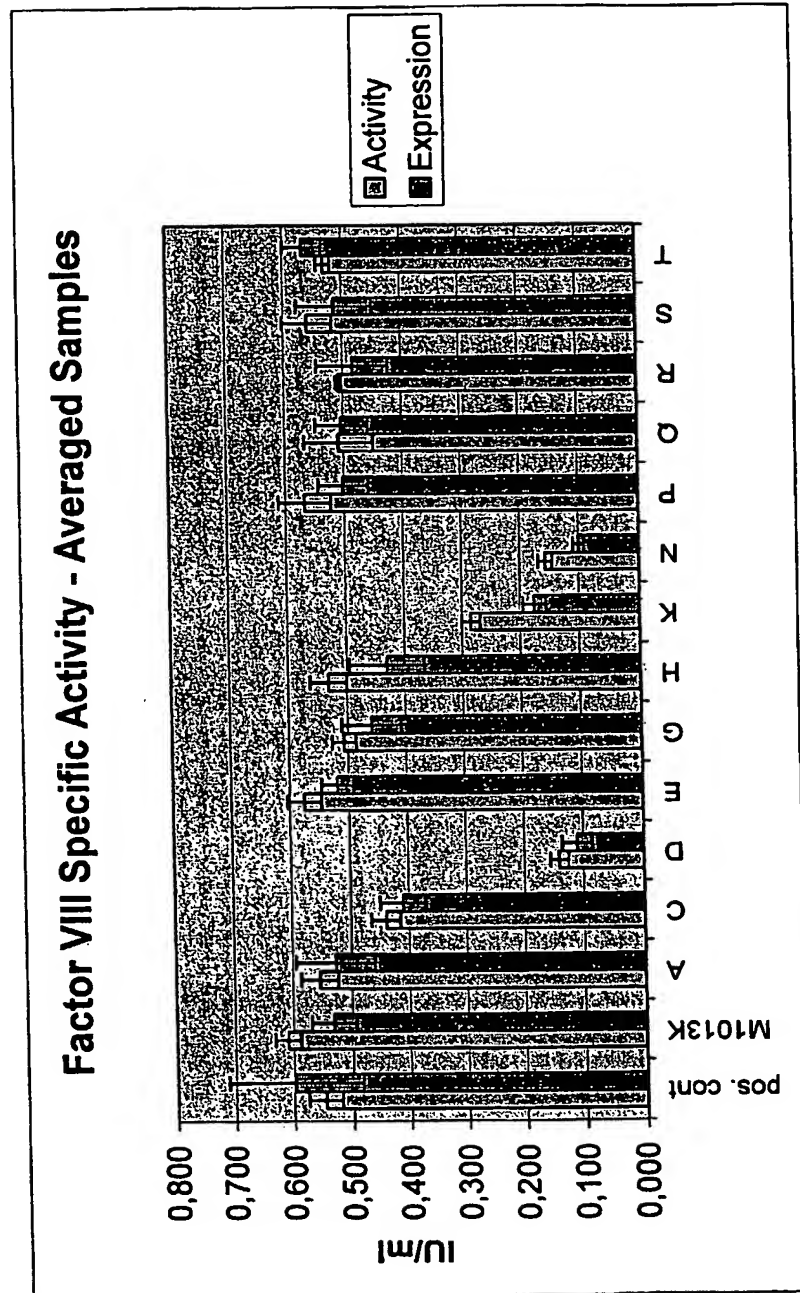


FIGURE 6



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FIGURE 7

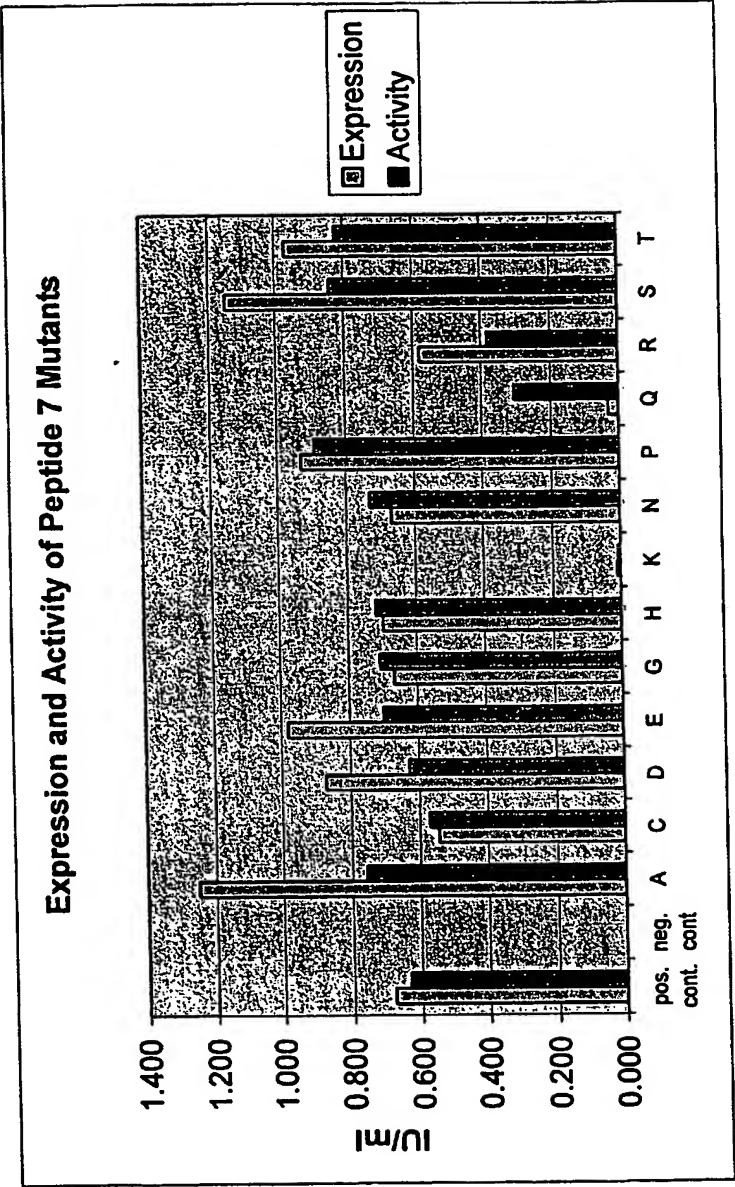
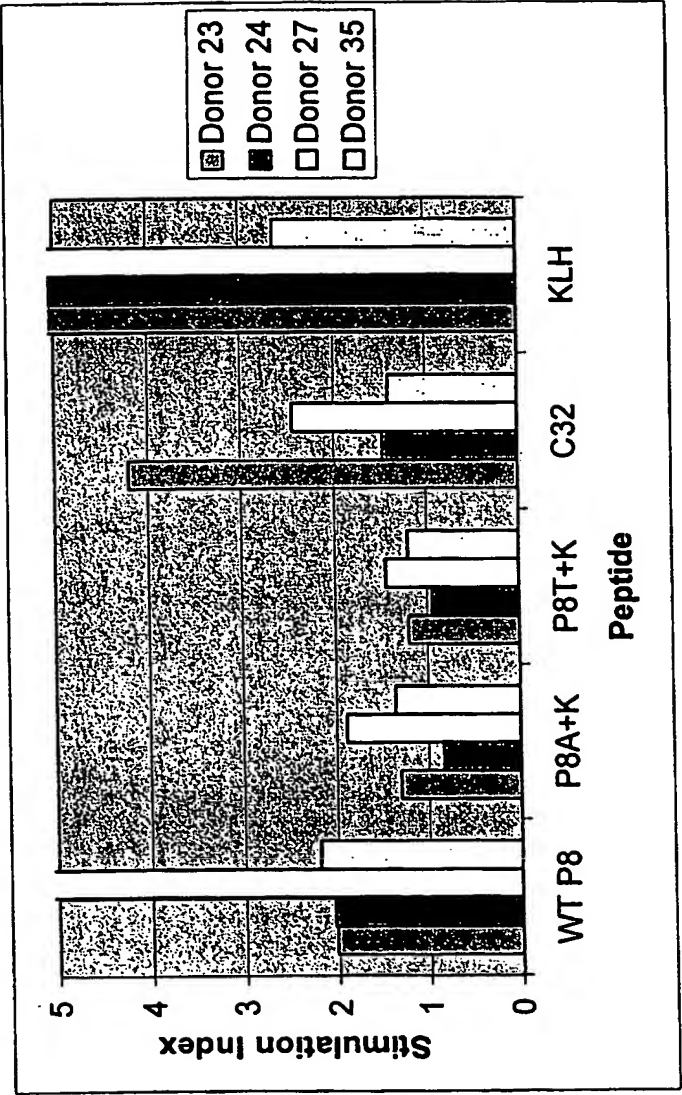


FIGURE 8



Donor #	MHC Alleotype
23	DRB1*04, DRB1*13, DRB3, DRB4*01
24	DRB1*03, DRB1*04, DRB3, DRB4*01
27	DRB1*03, DRB1*15, DRB3, DRB5
35	DRB1*04, DRB1*08, DRB4*01

Peptide	Sequence	Origin
WTP8	CNIQMEDPTFKENYR	FVIII immunogenic peptide P8; residues 1009-1023
P8K+A	CNAQKEDPTFKENYR	Peptide P8 with substitutions I ₁₀₁₁ A + M ₁₀₁₃ K
P8K+T	CNTQKEDPTFKENYR	Peptide P8 with substitutions I ₁₀₁₁ T + M ₁₀₁₃ K
C32	PKYVKQNTLKLAT	Control peptide; influenza haemagglutinin residues 307-319
KLH	Whole protein	Control protein; keyhole limpet haemocyanin

FIGURE 9

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A) Factor VIII WT (Peptide 7)

	101	103	3011	302	401	701	801	9011	1001	11011	1201	1301	1401	15011	1602	30202	401011	50101
D																		
Y																		
G																		
H																		
S																		
S																		
P	H	H	H	H	H	H	H		H	H	H	H	H	H	H	H	H	H
H	L	L	L	L	L		L			L	L		L		L	L	L	L
V																		
L																		
R																		
R																		
A																		
A																		
Q																		
S																		
G	L	L	H	H	L	L	L		L	L	H	H	H			L	L	L
S																		
V																		

B) Factor VIII V_{823A}

	101	103	3011	302	401	701	801	9011	1001	11011	1201	1301	1401	15011	1602	30202	401011	50101
D																		
Y																		
G																		
H																		
S																		
S																		
P																		
H	L	L	L	L	L		L			L	L		L		L	L	L	L
A																		
L																		
R																		
R																		
A																		
Q																		
S																		
G	L	L	H	H	L	L	L		L	L	H	H	H			L	L	L
S																		
V																		

H High affinity MHC ligand; score > 1,000,000

Medium affinity MHC ligand; score 750,001 - 1,000,000

L Low affinity MHC ligand; score 500,000 - 750,000

FIGURE 10

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1	25	50	75
ATTRYYLGAVELSDYMQSDLGELPVDARFPFPRVPKSFNFNTSVVYKKTLEFVEFTDHLFENIAKPRPPWMGLLGPT	100	125	150
IQAEVYDVTVVITLKNMASHPVSLHAVGVSYWKASEGAEYDDQTSQREKEDDKVFPGGSHTYVWQVLKENGPMASD	175	200	225
PLCLTYSYLSHVDLVKDLNSGLIGALLVCREGLAKEKTQTLHKFILLFAVFDEGKSWHSETKNLSMQDRDAASA	250	275	300
RAWPKMHTVNGYVNRSLPGLIGCHRKSVMHVGIGMTTPEVHSIFLEGHTFLVRNHRQASLEISPITFLTAQTLL	325	350	375
MDLGQFLLFCHISSHQHDGMEAYVKVDSCPEEPQLRMKNNEEAEDYDDDLTDSEMDVVRFDDDNSPSFIQIRVA	400	425	450
KKHPKTWVHYIAAEEDWDYAPLVLPDDRYSKSYLNNGPQRIGRKYKKVRFMAYTDETFKTREAIQHESGILG	475	500	525
PLLYGEVGDTHLLIIFKNQASRPYNIYPHGITDVRPLYSRRLPKGKHLKDFPILPGEIFKYKWTVTVEDGPTKSD	550	575	600
PRCLTRYSSFFVNMRDLASGLIGLLICYKESVDQRGNQIMSDKRNVIKSVFDENRSWYLTENIQRFLPNPAG	625	650	675
VQLEDPEFQASNIMHSINGYVFDLSQLSVCLHEVAYWYILSIGAQTDLSVFFSGYTFKHKVMYEDTLTLFPFSG	700	725	750
ETVFMSMENPGLWILGCHNSDFRNRGMTALLKVSSCDKNTGDYEDSYEDISAYLLSKNNAIEPRSFQNPVLK	775	800	825
RHQREITRTTLQSDQEEIDYDDTISVEMKKEDFDIYDEDENQSPRSFQKTRHYFIAAVERLWDYGMSSSPHVLK	850	875	900
NRAQSGSVQFQKQVVFQEFQDGSFTQPLYRGELNEHLGLLGPYIRAEVEDNIMVTFRNQASRPYSFYSSLISYEE	925	950	975
DQRQGAEPKRFVKNPNETKTYFWKVQHMAPTKDEFDCKAWAYFSDVDLEKDVHSGGLIGPLLVCHTNTLNPAHGR	1000	1025	1050
QVTVQEFALFFTIFDETKSWYFTENMERNCRAPCNIQMEDPTFKENYRFHAINGYIMDTLPGLVMAQDQIRRWYL	1075	1100	1125
LSMGSNENIHSIHFSGHVFTVRKKEEYKMALYNLYPGVFETVEMLPKAGIWRVECLIGEHLHAGMSTLFLVYSN	1150	1175	1200
KCQTPLGMASGHIRDFQITASGOYGQWAPKLARLHYSGSINAWSTKEPFSWIKVDLLAPMIIHGKIQGARQKFS	1225	1250	1275
SLYISQFIIMYSLDGKKWQTYRGNSTGTLMVFFGNVDSSGIKHNI FNPPIIARYIRLHPHYSIRSTLRMELMGC	1300	1325	1350
DLNSCSMPLGMESKAISDAQITASSYFTNMFATWSPSKARLHLQGRSNAWRPQVNNPKEWLQVDFQKTMKVTGVT	1375	1400	1425
TQGVKSLTSMYVKEFLISSQDGHQWTLFFQNGKVKVFQGNQDSFTPVVNSLDPPLLTRYLRIHPQSWVHQIAL	1438		
RMEVLGCEAQDLY			

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